

REMARKS/ARGUMENTS

Applicants thank the Examiner for the interview conducted on March 11, 2004. This Amendment is in response to the Final Office Action dated February 24, 2004 and to the issues discussed during the interview.

Claims 1-59 are pending in the present application. Claims 1, 15, 17, 24, 37, 48, 50 and 55 have been amended and claim 7 has been cancelled. Accordingly, claims 1-6, and claims 8-59 remain pending.

Amended Claims

Applicants have amended independent claims 1, 15, 24, 37, 48 and 55 to clarify the present invention. In particular those claims have been amended to incorporate the limitations of claim 7 and to replace the term "manufacturing plan" with "product plan." Accordingly, those claims now recite that the product plan "integrates the requirements with population rules that determine a sequence for manufacturing the product, and configuration rules that determine proper configuration settings." Applicants respectfully submit that no new matter has been presented and that a new search is not required.

35 U.S.C. §102 Rejection

In the Final Office Action, the Examiner maintained his rejection of claims 1-9, 13-21, 23-27, 36-43, 47-52 and 55-59 under 35 U.S.C. §102(e) as being anticipated by Akasaka et al. (U.S. Patent No. 5,576,965). In so doing, the Examiner stated:

Regarding claim 1, 2, 13-15, 23-25, 36-38, 47-48 and 55 Akasaka et al. discloses a method for product fulfillment in an automated configure-to-order manufacturing system (see abstract lines 9-11), the method comprising the steps of: obtaining requirements for a product from a customer through a user interface (see col 12, lines 49-52); automatically (see col 3 lines 24-31) creating a plan from

the requirements using a descriptive language, the descriptive language being hierarchical and object oriented (see col 1 lines 5-15; and conveying the plan to the automated manufacturing system, wherein the plan is used to manufacture the product satisfying the requirements (see col 3 lines 21-32); and storing the plan for future repairs and maintenance (see col 13 lines 12-21).

Applicants respectfully traverse.

The present invention is directed to an object oriented approach and data model for configure-to-order product manufacturing systems. In the preferred embodiment, an automated manufacturing system is coupled to a user interface which allows a user to submit a plurality of requirements for a product to be manufactured during an ordering phase. Based on the requirements, a product plan is created using a descriptive language that is understood and interpreted by the automated manufacturing system. The plan describes fully every aspect of the product, from the hardware components to the types of connections between devices. The product plan is then conveyed to the automated manufacturing system, which interprets the plan and assembles the product. By utilizing the descriptive language to describe the product, all processes in a product fulfillment system, e.g., configuration, testing and assembly, can understand the product plan and change the plan if needed. Thus, customer input is minimized.

The present invention, as recited in independent claims 1, 15, 37, and 55, provides:

1. A method for product fulfillment in an automated manufacturing system, the method comprising the steps of:

- a) obtaining requirements for a product from a customer;
- b) creating a product plan from the requirements using a descriptive language, wherein the plan integrates the requirements with population rules that determine a sequence for manufacturing the product, and configuration rules that determine proper configuration settings; and
- c) conveying the product plan to the automated manufacturing system, wherein the automated manufacturing system interprets the product plan and builds the product satisfying the requirements.

15. A method for product fulfillment in a configure-to-order automated manufacturing system, the method comprising the steps of:

- a) obtaining requirements for a product from a customer through a user interface;

b) creating a product plan from the requirements using a descriptive language, wherein the plan integrates the requirements with population rules that determine a sequence for manufacturing the product, and configuration rules that determine proper configuration settings and the descriptive language is hierarchical and object oriented; and

c) conveying the product plan to the automated manufacturing system, wherein the automated manufacturing system interprets the product plan and builds the product satisfying the requirements.

37. A configure-to-order automated manufacturing system, comprising:
a user interface for obtaining requirements for a product from a customer;
an order processing system for automatically creating a product plan from the requirements using a descriptive language, wherein the plan integrates the requirements with population rules that determine a sequence for manufacturing the product, and configuration rules that determine proper configuration settings;
and

a plurality of processes for manufacturing the product from the product plan.

55. A method for describing a product for manufacture, comprising the steps of:

a) providing a descriptive language, wherein an automated manufacturing system is capable of interpreting the descriptive language and the descriptive language is hierarchical and object oriented; and

b) using the descriptive language to create a product plan that describes the product, wherein the plan integrates the requirements with population rules that determine a sequence for manufacturing the product, and configuration rules that determine proper configuration settings.

Independent claim 24 is a method claim having a scope similar to that of claim 1 and claim 15, and independent claim 48 is a software claim having a scope similar to that of claim 1.

Independent Claims 1, 15, 24, 37, 48 and 55 are Allowable Over Akasaka.

Whereas the present invention is directed to an automated *product fulfillment/manufacturing* process, Akasaka is directed exclusively to a “*design aiding apparatus* . . . for use in a field of computer software to facilitate a *design process*.” Abstract. Akasaka provides “a design aiding method in which a design procedure is automatically generated in association with various patterns required and which can guide the design procedure in a

situation where judgment of the user is necessitated, for example, at an occurrence of a plurality of candidates of values of attributes appearing in a process of design operation, thereby appropriately generating a design plan at a high speed.” (Col. 3, lines 23-32). In Akasaka, the design aiding system ultimately creates a *design* plan, which is a diagram with attribute values (see Figure 36).

Unlike the present invention, Akasaka fails to teach or suggest “creating a product plan . . . , wherein the plan integrates the requirements with population rules that determine a sequence for manufacturing the product, and configuration rules that determine proper configuration settings,” as recited in claims 1, 15, 24, 37, 48 and 55. In the present invention, the product plan is a *descriptive* document, i.e., the product plan is *not* a diagram, as in Akasaka. The document is written in a language that is hierarchical and object-oriented and that is understood and interpreted by the automated *manufacturing* system. Akasaka does not teach or suggest that the resultant design plan is anything other than a *diagram* of the design object and a list of attribute values for the objects of the design (Figure 36). Moreover, Akasaka fails to teach or suggest that such a design plan is conveyed to an automated manufacturing system that “interprets the product plan and builds the product satisfying the requirements.”

No portion of Akasaka teaches or suggests a plan that “integrates the requirements with population rules that determine a sequence for manufacturing the product, and configuration rules that determine proper configuration settings.” While the Examiner asserts that such information is inherent, Applicants respectfully disagree. Akasaka’s plan is a *design* plan. As such, Applicants respectfully submit that it would not inherently include population rules and configuration rules. Such rules are used in *building* the product and not in the *design* process.

Moreover, Applicants maintain that the portion of Akasaka that purportedly teaches a design plan using a descriptive language to create a manufacturing plan merely describes a design

aiding system that incorporates a user's design specifications with the system's constraints to develop a design plan. (Col. 1, lines 5-15). There is no mention or suggestion of "creating a product plan from the requirements using a descriptive language." Moreover, the cited portion of Akasaka that purportedly teaches conveying the product plan to the automated manufacturing system, which uses the plan to manufacture the product, merely describes providing a design aiding method that guides the design process in a situation where judgment of the user is necessitated in order to generate a design plan at a high speed. (Col. 3, lines 21-32). This portion makes no mention or suggestion of "conveying the product plan to an automated manufacturing system."

Based on the foregoing, Applicants respectfully submit that Akasaka fails to teach or suggest the cooperation of elements recited in independent claims 1, 15, 24, 37, 48 and 55. Accordingly, claims 1, 15, 24, 37, 48 and 55 are allowable over Akasaka. Claims 2-9, 13, 14, 16-21, 23, 25-27, 36, 38-43, 47, 49-52 and 56-59 depend from claims 1, 15, 24, 37, 48 and 55, respectively. Thus, the arguments presented above apply with full force to those dependent claims. Accordingly, for that reason, Applicants respectfully submit that claims 2-9, 13, 14, 16-21, 23, 25-27, 36, 38-43, 47, 49-52 and 56-59 are also allowable over Akasaka.

Dependent Claims 8 and 9 are Allowable Over Akasaka.

As stated above, claims 8 and 9 are allowable over Akasaka because they depend from claim 1. Applicants further submit that claims 8 and 9 are allowable over Akasaka because Akasaka fails to teach or suggest that "the automated manufacturing system includes a plurality of processes . . . the plurality of processes being software based," as recited in claim 8, and "providing a portion of the plan to a process of the plurality of processes, the portion being relevant to the process, thereby reducing the amount of information conveyed throughout the

automated manufacturing system,” as recited in claim 9. Applicants rely on their arguments presented in the December 5, 2003 response, and herein incorporate them by reference.

Applicants respectfully submit that claims 8 and 9 are allowable over Akasaka. Claims 20 and 51 have the same scope of claim 8, and claims 21, 43 and 52 have the same scope of claim 9. Accordingly claims 20, 51, 21, 43 and 52 are also allowable over Akasaka for this additional reason.

35 U.S.C. § 103 Rejection

The Examiner rejected claims 10-12, 22, 28-35, 44-46 and 53-54 under 35 U.S.C. §103(a) as being unpatentable over Akasaka in view of Forth et al.(U.S. Pub. No. 2002/0120521). Forth is directed to a system that permits an end-user to order IED's from a manufacturer or distributor specifically customized to their needs including all options and software such that when the IED is delivered, it is ready to be installed out of the box. (Page 4, ¶ 0041).

Applicants respectfully submit that claims 10-12, 22, 28-35, 44-46 and 53-54 depend from claims 1, 15, 24, 37, 48 and 55, respectively, which are allowable over Akasaka. Because Forth fails to remedy the defects of Akasaka, i.e., Forth fails to teach or suggest “creating a product plan . . . using a descriptive language, wherein the plan integrates the requirements with population rules that determine a sequence for manufacturing the product, and configuration rules that determine proper configuration settings,” and “conveying the product plan to the automated manufacturing system,” claims 10-12, 22, 28-35, 44-46 and 53-54 are allowable over Akasaka in view of Forth.

Conclusion

In view of the foregoing, it is submitted that the claims 1-6, and 8-59 are allowable over the cited references and are in condition for allowance. Applicants respectfully request reconsideration of the rejections and objections to the claims, as now presented.


Applicants believe that this application is in condition for allowance. Should any unresolved issues remain, Examiner is invited to call Applicants' attorney at the telephone number indicated below.

Respectfully submitted,

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March 15, 2004

Date



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